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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/763,727
Filing Date: January 23, 2004
Appellant(s): YAO ET AL.

Sumit Bhattacharya
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 25 May 2007 appealing from the Office action mailed 11 October 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is incorrect. A reply after final rejection was filed on 11 January 2007. This reply included a list of previously presented claims, but included no amendments. Therefore, no amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

JP 2002-074870	Shiraishi et al.	15 March 2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 10,13-16 and 19-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Shiraishi et al. (JP 2002-074870).

With respect to claims 10 and 13-15, Shiraishi et al. (JP 2002-074870) teach an actuator component (52) comprising at least one layer of electrically-conductive material (includes lower-most 61, for instance); and at least one layer of electrically-insulative material (includes at least one layer of 60 above lower-most 61, for instance), wherein the conductive material and the insulative material are to be applied to an actuator finger (52a, for instance) one layer upon another in an alternating manner (as shown in FIG. 6, for instance); and the layer of insulative material is wider than the layer of conductive material (as shown in FIGS. 5-6, for instance, i.e., the insulative material completely covers the conductive material) such that an insulative layer, applied to the actuator finger and sandwiching a conductive layer between the insulative layer and the actuator finger (as shown in FIG. 5 relative to FIG. 6, for instance), at least partially encloses and electrically isolates the conductive layer latitudinal to the actuator finger (as shown in FIGS. 5-6, for instance) [as per claim 10]; wherein the insulative material is a piezoelectric ceramic material (paragraph [0055], for instance) [as per claim 13]; wherein the insulative material is lead zirconate titanate (paragraph [0055], for instance) [as per claim 14]; and wherein the actuator finger is a hard disk (10) drive micro-actuator finger (52a, for instance) [as per claim 15]. As the claims are directed to an "actuator component", per se, the method limitations appearing in lines 4-5 of claim 10, for instance, can only be accorded weight to the extent that they affect the structure of the completed "actuator component". Note that "[d]etermination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "applied to an actuator finger one layer upon

another in an alternating manner", for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process", *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a "[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "applied to an actuator finger one layer upon another in an alternating manner", for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations", *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976). In this instance, the structure of the completed "actuator component" as claimed would be no different than the structure of the "actuator component" taught by Shiraishi et al. (JP 2002-074870).

With respect to claims 16 and 19-21, Shiraishi et al. (JP 2002-074870) teach a piezoelectric actuator (52) comprising an actuator finger (52a, for instance) to receive application of at least one layer of electrically-conductive material (includes lower-most 61, for instance) and at least one layer of electrically-insulative material (includes at least one layer of 60 above lower-most 61, for instance), the application being one layer upon another in an alternating manner (as shown in FIG. 6, for instance), wherein the layer of insulative material is wider than the layer of conductive material (as shown in FIGS. 5-6, for instance, i.e., the insulative material completely covers the conductive material) such that an insulative layer, applied to the actuator finger and sandwiching a conductive layer between the insulative layer and the actuator finger (as shown in FIG. 5 relative to FIG. 6, for instance), at least partially encloses and electrically isolates the

conductive layer latitudinal to the actuator finger (as shown in FIGS. 5-6, for instance) [as per claim 16]; wherein the insulative material is a piezoelectric ceramic material (paragraph [0055], for instance) [as per claim 19]; wherein the insulative material is lead zirconate titanate (paragraph [0055], for instance) [as per claim 20]; and wherein the actuator finger is a hard disk (10) drive micro-actuator finger (52a, for instance) [as per claim 21]. As the claims are directed to an "piezoelectric actuator", per se, the method limitations appearing in lines 2-4 of claim 16, for instance, can only be accorded weight to the extent that they affect the structure of the completed "piezoelectric actuator". Note that "[d]etermination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "receive application... one layer upon another in an alternating manner", for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process." See *In re Thorpe, et al.*, supra. Furthermore, note that a "[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "receive application... one layer upon another in an alternating manner", for instance], is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations." See *In re Hirao and Sato*, supra. In this instance, the structure of the completed "piezoelectric actuator" as claimed would be no different than the structure of the "piezoelectric actuator" taught by Shiraishi et al. (JP 2002-074870).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-12 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al. (JP 2002-074870).

Shiraishi et al. (JP 2002-074870) teach the component/actuator as detailed in the rejection under 35 U.S.C. 102(a), supra. Shiraishi et al. (JP 2002-074870), however, remain silent as to the conductive material being a "metal," as per claims 11 and 17, selected from the group "consisting of Gold, Platinum, and Copper," as per claims 12 and 18.

Official notice is taken of the fact that metal selected from the group consisting of gold, platinum and copper is a notoriously old and well known conductive material in the art in the same field of endeavor. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the conductive material of Shiraishi et al. (JP 2002-074870) be a metal selected from the group consisting of gold, platinum and copper. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the conductive material of Shiraishi et al. (JP 2002-074870) be a metal selected from the group consisting of gold, platinum and copper since such is a notoriously old and well

known conductive material in the art in the same field of endeavor, and since selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

(10) Response to Argument

The appellant(s) argues that "Shiraishi does not teach, suggest or describe at least '[a]n actuator component comprising: at least one layer of electrically-conductive material; and at least one layer of electrically-insulative material ... *sandwiching a conductive layer between said insulative layer and said actuator finger* ...' (e.g., as described in claim 10)" (emphasis added by appellant(s)). This argument, however, is not found to be persuasive because of the following: Firstly, the "actuator finger" is never positively set forth in independent claim 10, i.e., "to be applied to an actuator finger" is not a positive recitation of structure, but merely an intention of use. Nevertheless, Shiraishi et al. (JP 2002-074870) does teach an actuator component comprising at least one layer of electrically-conductive material (includes lower-most 61, for instance); and at least one layer of electrically-insulative material (includes at least one layer of 60 above lower-most 61, for instance) sandwiching a conductive layer (includes lower-most 61, for instance) between the insulative layer (includes layer of 60 above lower-most 61, for instance) and an actuator finger (52a, for instance, as shown in FIG. 5 relative to FIG. 6, for instance, i.e., when 52b (shown in FIGS. 5 and 6) is placed on the actuator finger (52a, as shown in FIG. 5), a conductive layer will be sandwiched between an insulative layer and the actuator finger). See attached Exhibit

A, for instance. Additionally, it should be noted that the claims do not preclude other layers (62, for instance) from also being sandwiched between the insulative layer and the actuator finger.

The appellant(s) further "disagree with the Examiner's contention that element 60 is the same as the 'insulative material', element 61 is the same as the 'conductive material', and element 52a is the same as the 'actuator finger' as described in embodiments of the present application." This argument, however, is not found to be persuasive for the following: In paragraph [0051] of Shiraishi et al. (JP 2002-074870), element "61" is disclosed as a signal-electrode layer. Signal-electrode layers are made of conductive material. In paragraph [0052] of Shiraishi et al. (JP 2002-074870), element "60" is disclosed as being PZT. PZT is insulative material. FIG. 5, for instance, of Shiraishi et al. (JP 2002-074870) shows element 52a to be an actuator finger.

The appellant(s) also assert that "Element 52a (shown in Figure 5) is wholly separate from the structure in Figure 6 including cited elements 60 and 61" (emphasis added by appellant(s)). This argument, however, is not found to be persuasive as element 52b includes elements 60 and 61 (as shown in FIG. 6, for instance) and element 52b is mounted on element 52a (as shown in FIG. 5, for instance). Therefore, element 52a is not wholly separate from elements 60 and 61. See attached Exhibit A, for instance.

The appellant(s) additionally argue that the "Examiner asserts when element 52b is placed on the alleged actuator finger 52a, a conductive layer will BE sandwiched between the insulative and the actuator finger. See Office Action dated 10/11/2006,

paragraph 7. Applicants disagree, and note the Examiner offers no support from the reference itself for this assertion." Appellant's attention is directed to FIG. 5 of Shiraishi et al. (JP 2002-074870), which shows that element 52b is placed on element 52a.

The appellant(s) further contend that "an examination of Figure 5 of the cited reference disproves the Examiner's assertion. Specifically, element 52b is never placed *on top of* the alleged actuator finger 52a; it is located on the side of element 52a" (emphasis added by appellant (s)). This argument, however, is not found to be persuasive as the word "top" is never set forth in the claims. See 37 CFR 1.111(b). Furthermore, the "top" of something is relative and depends upon viewer perspective.

The appellant(s) also assert that "since element 52b is located on the side of element 52a, it is impossible for any part of element 52b to be sandwiched by element 52a." This argument, however, is not found to be persuasive for the following: If this were true, then appellant(s) own disclosure would be lacking enablement. See, for instance, appellants Figures 3, 4, 5b, and 6-9, for instance, where the microactuators are mounted to the sides of the actuator fingers. Appellant(s) own disclosure is evidence that it is not impossible for sandwiching to occur when elements are mounted on the sides.

Exhibit A

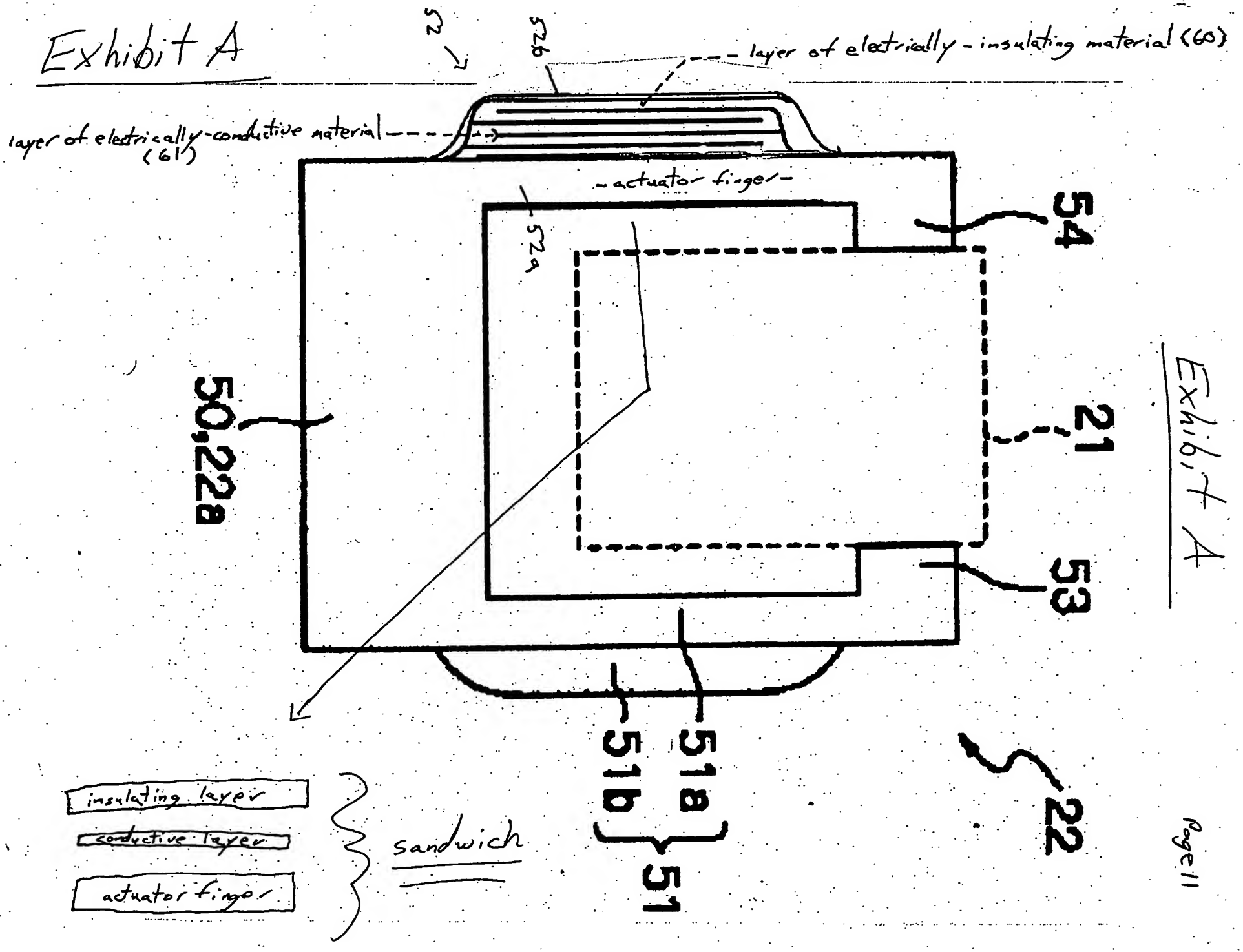

Exhibit A

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(12) Oral Argument

Appellant has not requested an oral hearing.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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